

**NOTES FROM THE FIRST FORMAL COORDINATED ENERGY AND WATER-CYCLE OBSERVATIONS  
PROJECT (CEOP) TELECONFERENCE ON ASIA-PACIFIC-AUSTRALIA REGIONAL HYDROCLIMATE  
PROJECTS AND REFERENCE SITE ISSUES HELD ON  
14 JANUARY 2009  
Final DRAFT, 26 March 2009**

## 1. INTRODUCTION

The 1<sup>st</sup> Asia-Pacific-Australia RHP and Reference Sites Teleconference related to the Coordinated Energy and Water-Cycle Observations Project (CEOP) took place on Wednesday 14 January 2009 at 08:30 UTC.

The issues that were discussed on the subject conference call included:

- (i) CEOP Strategic Implementation Plan (SIP) and reference site data requirements related to the CEOP Science Strategy;
- (ii) CEOP and CEOP Data element coordination strategy – conference call scheme;
- (iii) Outcomes of the Second CEOP Annual Meeting in Geneva and the planning of the Third Annual Meeting in Melbourne, Australia, 19 – 21 August 2009;
- (iv) Current status of the CEOP Reference Site Data Archive with focus on the sites located in the Asia-Pacific-Australia region;
- (v) Asia-Pacific and Australia RHP status and issues;
- (vi) Asia-Pacific and Australia Reference Sites status and issues: Phase 1 missing data and current phase submission plans;

### Participants

The participants were:

Toshio Koike	Tokyo, Japan, CEOP Co-Chair & representing JMA
Sam Benedict	San Diego, California, USA; CEOP International Coordination Function
Petra Koudelova	Tokyo, Japan; CEOP International Coordination Function
Katsunori Tamagawa	(Japan, CEOP Asia Reference Site Data Manager)
Tetsu Ohta	(Japan, CEOP Asia Reference Site Data Manager)
Jason Evans	(Australia, MDB Site Representative)
Manabu D. Yamanaka	(Japan, Western Maritime Continent, Central Maritime Continent, Eastern Maritime Continent, Northern Maritime Continent, Southern Maritime Continent sites representative)
Gianni Tartari	(Italy, Himalayas, Karakorum and Northern Apennines site representative)
Elisa Vuillermoz	(Italy, Himalayas, Karakorum and Northern Apennines site representative)
Kenichi Ueno	(Japan, Tsukuba site representative)
Hirohiko Ishikawa	(Japan, Tibet site representative)
Jianping Huang	(China, Lanzhou site representative)
Tsing-Chang (Mike) Chen	(Iowa, Northern South China Sea - Southern Japan site representative)
Mingguo Ma	(China, Heihe River Basin site representatives on behalf of Xin Li)
Rui Jin	(China, Heihe River Basin site representatives on behalf of Xin Li)
Shigenori Haginoya	(Japan, Tibet site representatives) (+81-29-853-8706)
Ming-Cheng Yen	(Taiwan, Northern South China Sea - Southern Japan site representative)
Hideyuki Kamimera	(Japan, Central Vietnam site and Western Maritime Continent sites representative)
Hisayuki Kubota	(Japan, Western Pacific Ocean site representative)
Jun Asanuma	(Japan, Northern Mongolia site representative)
Lei Huimin	(China, Downstream of the Yellow River site representative)
Ichirou Kaihotsu	(Japan, Mongolia site representative)
Tetsuo Ohata	(Japan, Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites representative)
Masatoshi Aoki	(Japan, Chao-Phraya River, North-East Thailand sites representative)
Jun Matsumoto	(Japan, Northeast Bangladesh site and Central Vietnam site representative)
Hironori Yabuki	(Japan, Eastern Siberian Tundra, Eastern Siberian Taiga, Mongol Arvayheer, Mongol Nalaikh sites representative)

Drs Steve Williams (Boulder, Colorado, USA; Representing CEOP Data Management), Dawen Yang (China, Downstream of the Yellow River site representative), Fadli Syamsudin (Indonesia, Western Maritime Continent, Central Maritime Continent, Eastern Maritime Continent, Northern Maritime Continent, Southern Maritime Continent sites representative), Liu Huizhi (China, Tongyu site representative), Xin Li

(China, Heihe River Basin site representative), Jun-Ichi Hamada (Japan, Western Maritime Continent, Central Maritime Continent, Eastern Maritime Continent, Northern Maritime Continent, Southern Maritime Continent sites representative), Wu Zhang (China, Lanzhou site representative), Gombo Davaa (Mongolia, Northern Mongolia site and Mongolia site representative), Ryuichi Shirooma (Japan, Western Pacific Ocean site representative) responded to the announcement but were not available for the call.

## 2. NEXT CONFERENCE CALL

The next, **2nd CEOP Asia-Pacific-Australia RHP and Reference Sites Teleconference** is proposed to take place on **Thursday 12 March 2009**. **Koudelova/Benedict** have the **action (A1)** to inform the group of the details of the next call nearer to the time of the call and to coordinate the origination of the call (**action A1a**).

## 3. CEOP AND CEOP DATA GROUP GENERAL ISSUES

### 3.1 Opening

(3.1a) **Benedict** welcomed everyone on the call and introduced the agenda, reference material that was circulated prior to the call, and background comments meant to setup the framework for reinitializing this series of important calls. Most of those on the call had already known about the merger of the Coordinated Enhanced Observing Period with the GEWEX Hydrometeorology Panel (GHP) that resulted in the formation of the Coordinated Energy and Water-cycle Observations Project (CEOP). However, for those who still had questions about that matter it was noted that they could bring up any thoughts or issues related to the merger at any time during the call. In this context, **participants were asked in advance of the call, to reference the latest version of the CEOP Strategic Implementation Plan (SIP)** available through the CEOP Home Page at:

<http://monsoon.t.u-tokyo.ac.jp/ceop2/implementationplan.html>. It was pointed out that the current version was an updated one dated on 1 December 2008 that reflected and responded to the comments from GEWEX SSG earlier this year.

(3.1b) As part of the initial discussion item the Co-Chair of the new CEOP initiative **Koike** reiterated that agreement had been reached to designate **1 January 2007 as the start date for the resumption of the CEOP Reference Site Data generation process. The five-year period from 1 January 2007 to 31 January 2011 was the formal investigative element of the Project.** Backfilling for 2005-2006 data is desirable if technical, financial and manpower resources of respective providers allow executing of this extension of the formal commitment.

(3.1c) In addition it was pointed out that it was highly desirable to submit **missing data for Phase 1** (September 2002 – December 2004) and the site representatives were asked for their kind attention to this matter.

### 3.2 CEOP and CEOP Data Element Coordination

(3.2a) The former GEWEX Continental Scale Experiments (CSEs) and associated reference site group was very active and well coordinated during CEOP Phase 1 but some momentum was lost during the transition period in 2007. In addition, number of CEOP elements and also reference sites increased and thus effective ways of coordination were sought. A new, expanded scheme of conference calls was proposed that reflects the wide range of CEOP activities. Currently, the scheme includes Model Output calls, Satellite Data Calls and RHP + reference site calls. Regarding the RHP and reference site groups, it was suggested that the calls be organized in a regional manner. This means that three parallel series of such calls will be implemented and each series would include representatives from certain region. The regions were proposed as follows:

1. Americas
2. Europe + Africa + NEESPI
3. Asia + Australia + Pacific region

The main reason for this distributed approach is that a number of CEOP Phase 2 reference sites are not associated with any of the GEWEX/CEOP RHP and thus individual reference site representatives need to participate in addition to the RHP representatives. This approach assures that issues related to the reference sites and data provision are communicated directly with respective reference site representatives, which will expedite the whole process. Accordingly, a too large group for these calls would be formed if all

of the CEOP sites and RHPs were involved. The regional division makes the calls "smaller" and thus better manageable. In order to assure coordination on the "global" level, the outputs of the individual calls will be communicated through the call Notes within the broader CEOP group and possible ad hoc calls among all RHP representatives and other element leaders may be scheduled if necessary.

(3.2b) The RHP and reference site data calls will mainly discuss RHP activities progress, reference site data submission and issues, and will inform of the CEOP general issues including updates from other elements. The calls will be held on a regular 3-monthly basis.

### 3.3 2<sup>nd</sup> CEOP Annual Meeting in Geneva, 15 – 17 September 2008

(3.3a) **Benedict** reported on the outcomes of the 2<sup>nd</sup> CEOP Annual Meeting that took place in Geneva in September 2008. The meeting was planned and undertaken to move ahead with the implementation of CEOP in accordance with the strategy outlined in the Strategic Implementation Plan. All of the presentation material provided by the participants at the meeting, including abstracts of talks and posters is available on the Internet through the CEOP Home Page at: <http://monsoon.t.u-tokyo.ac.jp/ceop2/meetings.html>. A brief summary report on the meeting has been published in the November issue of the GEWEX News (<http://gewex.org/Nov2008.pdf>) and subsequently the **full meeting report** has also been completed and posted on the said CEOP Meetings page.

(3.3b) It was also pointed out that the next, **3<sup>rd</sup> CEOP Annual Meeting** would be held in Melbourne, Australia, 19 – 21 August 2009, i.e. the event will precede the GEWEX and iLEAPS science conferences. The venue for the CEOP meeting will be the Bureau of Meteorology (BoM). Further details and the meeting website will be released in due course. The participants on the call were asked to consider their participation in this important event and also possible contribution to the ensuing GEWEX/iLEAPS conferences that will take place in Melbourne, Australia, 24 – 28 August 2009. The conference website is available at: [http://www.gewex.org/2009gewex\\_ileaps\\_conf.html](http://www.gewex.org/2009gewex_ileaps_conf.html). Abstracts for all sessions are currently being accepted and can be submitted on-line through the meeting website ([http://www.gewex.org/2009gewex\\_ileaps\\_conf\\_abstracts.html](http://www.gewex.org/2009gewex_ileaps_conf_abstracts.html)). The deadline for abstract submission is **15 March 2009**.

It was highlighted that the CEOP meeting would focus on the CEOP strategic planning issues and the scientific and technical contributions were expected to be submitted to the ensuing GEWEX/iLEAPS science conferences.

(3.3c) In this context, **Tartari** advised the group that a special poster session on High Elevations would be organized as a part of the GEWEX science conference in Melbourne and invited the participants to consider their contribution to this session. More information is available through the High Elevation element website at: <http://www.ceop-he.org/cms/>. The due date for submission abstracts to the special High Elevations poster session is also **15 March 2009** and should be done through the GEWEX on-line submission site: [http://www.gewex.org/2009gewex\\_ileaps\\_conf\\_abstracts.html](http://www.gewex.org/2009gewex_ileaps_conf_abstracts.html).

### 3.4 GEWEX Legacy Document

The group was also informed that the GEWEX Legacy document had been prepared to which CEOP provided a contribution. The Legacy Document is also perceived as part of preparation for the transition of the WCRP projects in 2013 and thus include (1) GEWEX accomplishments of Phase 2 and (2) the legacy for future based on what has been done and what is felt to be important to be continued.

### 3.5 Japan Data Integration and Analysis System (DIAS)

**Koike** introduced Data Integration and Analysis System (DIAS) that was launched in 2006 as part of the Earth Observation and Ocean Exploration System, which is one of five National Key Technologies defined by the 3<sup>rd</sup> Basic Program for Science and Technology of Japan. This system has been build up based on experiences gained through the CEOP Phase 1 Data Management and is designed to enable archiving, disseminating, integration and analyzing multidisciplinary earth observation data. The system includes components supporting data and metadata provision and data quality control procedure. These components that were used by the CEOP Asian reference site providers during Phase 1 have been upgraded and are now also opened to other interested data providers. Persons interested in these services should contact **Mr. Katsunori Tamagawa** ([tamagawa@hydra.t.u-tokyo.ac.jp](mailto:tamagawa@hydra.t.u-tokyo.ac.jp)) at the University of Tokyo.

#### 4. RHP and Reference Site Reports

##### 4.1 Summary status of the reference site archive at NCAR/EOL

(4.1a) On behalf of the Data Management group, **Benedict** introduced the current status of the CEOP reference site data archive referring to the document summarizing the status of the sites located in the Asia-Pacific-Australia region that was distributed prior to the call (see Attachment 1). **Benedict** pointed out three main issues that need to be considered including (i) missing data for the Phase 1 period (October 2002 – December 2004) – this applies for sites that participated in Phase 1; (ii) submissions for the transition period January 2005 – December 2006; and (iii) submissions for the current phase of CEOP, i.e. January 2007 – December 2011. It was mentioned that it would be highly desirable to complete data submissions for all three periods in order to obtain a long data series that are critical for many CEOP and other energy and water cycle related studies and the site representatives were asked to consider such commitment. Nevertheless, extension of the formal commitment to provide data for the transition period 2005 – 2006 depend on technical, financial and manpower resources of respective providers as mentioned in Section 3.1 above.

(4.1b) It was also pointed out that in addition to the measurements collected during Phase 1, **data related to clouds, carbon, and other scientific issues** would be welcomed and appreciated if such observations exist at the sites. These items would not be included in the current common format files but additional files would be created. Based on the availability of such data, the Data Management group will propose an adequate format.

(4.1c) Reflecting on the increased number of the Asian-Pacific region sites and the fact that many of them are not associated with any RHP, it was proposed and agreed that the sites in this region would referred as “CEOP\_AP”. These include former CAMP and MAHASRI sites and other sites in the Asia-Pacific region.

##### 4.2 MDB by Jason Evans

**Evans** reported that MDB sites would continue its observation and the data would be contributed to CEOP through the transition period 2005 – 2006 and the current data collection phase up to 2011. The next part of data will be submitted in the near future.

##### 4.3 CEOP AP: Northern South China Sea - Southern Japan by Mike Chen and Ming-Chen Yen

(4.3a) **Chen** reported that the 2005 – 2006 data could be submitted very soon but a letter describing required data would be needed. CEOP Coordination Function including **Benedict and Koudelova** and CEOP\_AP data manager, **Katsunori Tamagawa**, have **action (A2)** to draft such a letter and send it to Chen. Also, **Tamagawa** will advise Chen of the data submission procedure (**action A2a**).

(4.3b) **Chen** further advised the group that two field experiments took place from summer 2008 through winter 2009 that provided various intensive and extensive observations. Data from these experiments can also be submitted to CEOP. **Chen** accepted **action (A2b)** to provide description of these data to Tamagawa.

##### 4.4 CEOP AP: Maritime Continent by Manabu Yamanaka

**Yamanaka** advised the group that the Western Maritime Continent site in Sumatra had continuous observations since 1 January 2007 and would provide these data to CEOP. Other four sites have been established later and can provide data starting from 1 January 2008. In addition, **Yamanaka** voiced that an intensive observation experiment was currently taking place in Indonesia that was part of Asian Monsoon Year under the MAHASRI RHP activities.

##### 4.5 CEOP AP: Western Pacific Ocean by Hisayuki Kubota

**Kubota** reported that he had got familiar with the UT data upload and quality check system and was preparing the 2007 data for submission. Data up to October 2008 have been collected and the next acquisition will be done by the end of January 2009. These data will be submitted to CEOP in due course.

##### 4.6 CEOP AP: Tsukuba by Ken'ichi Ueno

**Ueno** reported that the Tsukuba site was in operation since 2007 and included 7 stations. One and a half year period of data have been already collected and converted into the CEOP format including flags.

These data are available through the Tsukuba site website and can be directly submitted to NCAR. **Ueno** took the **action (A3)** to contact Steve Williams and arrange the transfer of the data to the NCAR archive.

#### 4.7 CEOP AP: Central Vietnam by Hideyuki Kamimera

**Kamimera** advised the group that the observations in Central Vietnam were conducted in collaboration of MAHASRI with National Hydro – Meteorological Service of Vietnam and included surface meteorology data. The AWS was installed in October 2008 and thus the data from this date will be provided to CEOP. First part of the data will be collected in March 2009 and data processing and submission to CEOP will follow in due course.

#### 4.8 CEOP AP: Himalayas, Karakorum by Gianni Tartari and Elisa Vuillermoz

(4.8a) **Vuillermoz** reported that they had already submitted the Himalayan site data for the period 2005 – 2006 and were anticipating response from the CEOP Data Management group on its completeness in terms of data format and quality. Subsequently after the call, the format and data quality was confirmed. In addition, the group was preparing the Karakorum (Pakistan) site data for the year 2006. **Vuillermoz** further advised the group that the soil measurement and radiation sensors had been replaced at the Himalayan Lukla station.

(4.8b) **Tartari** informed the group that river discharge data might be available in the area of the Himalayan site and suggested that a CEOP reference catchment be recognized there. This idea was welcomed by CEOP Co-Chair Toshio Koike and **Tartari** was asked to prepare brief introductory material including one or two charts and send it to Koike and the CEOP Coordination Function (Benedict and Koudelova) (**action A4**).

#### 4.9 Other sites: Italian Alps and Apennines by Gianni Tartari and Elisa Vuillermoz

**Vuillermoz** reported that this was the most recently proposed site and the site managers of included stations would need a formal letter of recognition of these stations as part of the CEOP reference site called “Italian Alps and Apennines. **Vuillermoz** took the **action (A5)** to draft a paragraph that would include desirable text of such letter and **Benedict and Koudelova (A5a)** would follow up with finalizing the draft and sending it formally on behalf of CEOP. Subsequently, Vuillermoz provided the draft letter to the CEOP Coordination Function who has the pending action A5a.

#### 4.10 CEOP AP: Tibet by Hirohiko Ishikawa

**Ishikawa** reported that the stations in Tibet were working well and a lot of data had been collected including 2005 – 2006 period. However, the Tibet site group would need assistance with the data format conversion and data quality control. The University of Tokyo team led by K. Tamagawa will provide needed help. The details will be discussed offline between **Ishikawa and Tamagawa (action A6)**.

#### 4.11 CEOP AP: Lanzhou Jianping Huang

**Huang** reported that the Lanzhou site was in operation since 2006 and the data was available from that time. However, he needs to get familiar with the UT data system and proceed with format conversion and data quality check, which may be accomplished within several months. In addition, **Huang** advised that group that a peer-reviewed paper on the site was published and he would provide it for circulation within the CEOP community. Subsequently, the paper has been sent to the CEOP Coordination Function and posted on the CEOP Home Page.

#### 4.12 CEOP AP: Huihe River Basin by Mingguo Ma

**Ma** reported that the site included 4 stations that were installed in different land cover areas in 2007. The collected data were currently being checked and would be converted into the CEOP format in the near future.

#### 4.13 CEOP AP: Yellow River by Huimin Lei

**Lei** reported that observation at this site began in March 2005 and the instruments were running well. Almost 4 years of data is available but these need to be converted into the CEOP format and quality checked. This task will be undertaken in the near future in cooperation with the UT team and the UT data system.

#### 4.14 CEOP AP: Northern Mongolia by Jun Asanuma

**Asanuma** reported that this was a new site that included two ground stations in taiga forest and step grassland and was operated in collaboration with the Mongolian team. The forest station observation was interrupted in 2006 due to lack of resources but the group was making effort to restart operation of the station. The data from the grassland station was collected and would be processed in cooperation with the UT team soon.

#### 4.15 CEOP AP: Mongolia by Ichiro Kaihotsu

**Kaihotsu** reported that this site was participating in Phase 1 and would continue in the current phase of CEOP including the period 2005 – 2006. He voiced that the data since 2005 were collected and processed into the CEOP format but data quality flags had not been added yet. This will be done in cooperation with the UT team and data submitted to the NCAR archive in the near future.

#### 4.16 CEOP AP: Siberia and Mongol Arvayheer and Nalaikh sites by Hironori Yabuki

**Yabuki** reported that the Siberia Tundra and Taiga sites were continuing participation in CEOP from Phase 1 and data up to 2008 had been already collected. The Mongol Arvayheer and Nalaikh were new sites that would contribute data for the current CEOP Phase. Data up to 2008 have been collected. All the data need to be processed into the CEOP format and quality checked, which will be done in cooperation with the UT team in the near future.

#### 4.17 CEOP AP: Chao Phraya River and North-East Thailand by Masatoshi Aoki

**Aoki** reported that there were certain issues with financial resources to keep the sites in operation beyond the end of 2009 and continued operation could not be confirmed at this stage. The data collected up to present will be processed in cooperation with the UT team and submitted to CEOP in the near future.

#### 4.18 CEOP AP: Northwest Bangladesh by Jun Matsumoto

**Matsumoto** reported that the site included 3 AWS stations and the data from these stations would be provided to CEOP. The data will be processed in cooperation with the UT team and submitted to CEOP in the near future.

## **5. OTHER ISSUES**

### 5.1 Meetings

(5.1a) The next **3<sup>rd</sup> CEOP Annual Meeting** will be held in **Melbourne, Australia, from 19 through 21 August 2009** in conjunction with the GEWEX/iLEAPS science conferences that will take place in Melbourne, 24 – 28 August 2009 ([http://www.gewex.org/2009gewex\\_ileaps\\_conf.html](http://www.gewex.org/2009gewex_ileaps_conf.html)). Participants were asked to consider their participation in this important event. Further details of the CEOP meeting will be provided in due course.

(5.1b) The 2<sup>nd</sup> Lund Regional-scale Climate Modeling Workshop will be held in **Lund, Sweden** from **4 – 8 May 2009** (see the GEWEX calendar page: [http://www.gewex.org/gewex\\_meetings.html](http://www.gewex.org/gewex_meetings.html) for more information).

### 5.2 CEOP Home Page and Satellite Data Gateway

(5.2a) It was reiterated that the CEOP Home Page had been released and was available at: <http://www.ceop.net> or directly at <http://monsoon.t.u-tokyo.ac.jp/ceop2/>.

(5.2b) It was also mentioned that the CEOP Satellite Data Gateway had been opened for public. It is available at: <http://monsoon.t.u-tokyo.ac.jp/ceop2/satellite/>. **Williams** voiced that the link to the Gateway was posted on the Data Management website.

## 6. CLOSING

**Koike** acknowledged the participants for attending the call and providing their valuable contributions, comments and suggestions. The call was adjourned at 10:10 UTC.

### ATTACHMENT 1      **CEOP Asia-Pacific-Australia Region Reference Site Data Status Report** (updated through 8 January 2009)

#### **MAHASRI/CAMP**

**Chao Phraya River** – All data sets complete through 2004. No data submitted for 2005 on.

**Equatorial Island** - All data sets complete through 2004. No data submitted for 2005 on.

**Himalayas** - All data sets complete through 2004. No data submitted for 2005 on.

**Korean Haenam** - All data sets complete through September 2003. No data submitted for October 2003 on.

**Korean Peninsula** - All data sets complete through March 2003. No data submitted for April 2003 on.

**Mongolia** - All data sets complete through 2004. No data submitted for 2005 on.

**Northeast Thailand** - All data sets complete through 2004. No data submitted for 2005 on.

**Northern South China Sea – Southern Japan** - All data sets complete through 2004. No data submitted for 2005 on.

**Northeast Thailand** - All data sets complete through 2004. No data submitted for 2005 on.

**Siberia Taiga** - All data sets complete through 17 December 2004. No data submitted for 18 December 2004 on.

**Tongyu** - All data sets complete through 2004. No data submitted for 2005 on.

**Western Pacific Ocean** - All data sets complete through 2004. No data submitted for 2005 on.

**Other MAHASRI/CAMP Reference Sites** – No data has been submitted yet.

#### **MDB**

**Murrumbidgee** - All data sets complete through 2004. No data submitted for 2005 on.

**Tumbarumba** – FLX data complete through 30 September 2004. No FLX data submitted for October 2004 on. No SFC, TWR, STM or sounding data has been submitted.

#### **Other**

**Other ARM TWP** - All data sets complete through 2004. Data for 2005-2007 are in-house and currently being processed.